TITLE

Architecture Models for Connecting Data Networks: Experiences with Electronic Lab Reporting in Washington State

THEME

Enhance Environmental Public Health Tracking Workforce and Infrastructure

KEYWORDS

electronic lab reporting, network architecture, data system linkage, data brokering

BACKGROUND

In January 2005, the Washington State Department of Health introduced PHRED, a system for Public Health Reporting of Electronic Data. PHRED is built on a platform that allows for "data brokering". While PHRED's present function is to bring in electronic laboratory and clinical case reports for notifiable conditions, its flexible, standards-based design will accommodate other data brokering needs in the future. In this session, the presenters will discuss essential elements of the PHRED platform, tools for data management, development considerations concerning the need to eventually report to the National EPHT Network, and lessons learned during the implementation of this system.

OBJECTIVE(S)

To build an electronic data reporting system that can improve the flow of data into and out from DOH.

METHOD(S)

During the last year and a half, Washington EPHTN has been partnering with the Washington Electronic Disease Surveillance System (WEDSS) program to implement a data system for electronic reporting of lab data. We are documenting lessons learned and examining how the PHRED platform can be used for other data exchange needs.

RESULT(S)

DOH now has the ability to receive a data stream of test results for notifiable conditions from labs that can send these data electronically. Once the conversion to PHRED is complete, labs using the system will not be required to fax or mail case reports, eliminating a significant burden of reporting. For DOH programs, electronic receipt of these data in PHRED will result in more timely and complete reporting and less duplicate data entry with its associated potential for error. PHRED also establishes a data transformation and brokering platform within DOH that can be used for other data- sharing purposes, and provides a secure pathway through firewalls. The platform incorporates standards-based technologies, including Extensible Markup Language (XML), Public Key/Private Key Architecture, Asynchronous Message Queuing (AMQ), and HL7 formatting. Finally, we have found that successful implementation of the PHRED platform has resulted from a critical mass of core technological staff and decision makers who support a move towards this architecture.

DISCUSSION/RECOMMENDATION(S)

Washington DOH's capacity for data sharing will greatly increase as a result of the technological advances introduced by PHRED. Still, in order to take advantage of the PHRED platform, programs will need to reorient their approach to receiving and sending data, and technological staff will need to be committed to supporting these activities. Working with partners to understand this infrastructure and visualize its uses and benefits will be an ongoing task. W-EPHTN and WEDSS have invested heavily in the development and deployment of PHRED. We now need to invest in the outreach required to maximize the potential uses of this technology.

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